

Intended Applications

Materials are designed to meet the demands of modern reciprocal (phase shifter), non reciprocal (isolators, circulators), and other applications that cover the frequency range, 100 MHz to 80 GHz. All performance requirements such as isolation, VSWR, midband frequency, bandwidth operating temperature, power handling, etc. are given high priority while addressing needs of optimal size, shape, and price.

Availability

Because of the numerous devices and design parameters to be considered, the selection of a microwave ferrite based strictly on given intrinsic and extrinsic properties is challenging. However, modern design capabilities can specify what properties are critical and optimal for a given device or circuit. A design also

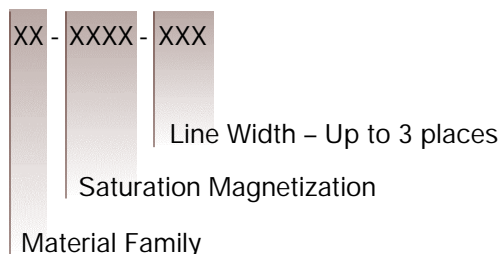
can be modified within constraints of target specifications to accommodate the performance capability of an existing material. Interactions between the designer and TRAK Ceramics, Inc. will hasten the required developments for the application and the material. While not intended to reflect lack of flexibility and ability to make improvements, some general selection guidelines are given below.

TRAK Ceramics, Inc. offers the world's broadest range of magnetic materials for the designer. TRAK Ceramics, Inc. controls its processes from raw materials through finishing to assure repeatability and a consistent, high quality product at minimal cost.

Family Type	Description	Recommended Operating Frequency (GHz)	Temperature Stability	Power Handling Capability	Magnetic Loss	Loop Squareness	Catalog Pages
YG	Yttrium Iron Garnet	2.0 - 12.0	F	P to F	F to E	E	8
AL	Aluminum Garnet	1.0 - 8.0	P to F	P to F	F	E	8
GD	Gadolinium Garnet	2.0 - 12.0	F	F	P	E	10
GA	Gadolinium Aluminum Garnet	1.0 - 8.0	F	F to E	P	F to E	10
NG	Narrow Line Width Garnet	2.0 - 12.0	P to F	P	E	F	12
HG	Holmium Garnet	2.0 - 12.0	P to F	F to E	P	E	12
NF	Nickel Ferrite – Spinel	2.0 - 29.0	E	E	P	F	14
MF	Magnesium Ferrite – Spinel	2.0 - 29.0	P	P	F	F	14
LF	Lithium Ferrite – Spinel	4.0 - 40.0	E	P to F	F to E	E	16

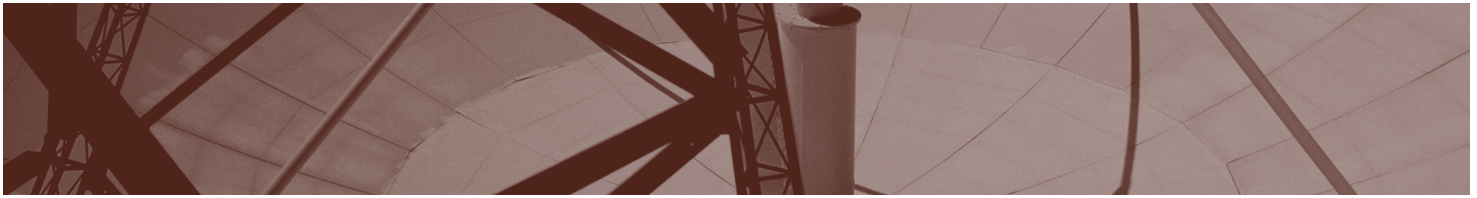
Legend: P = Poor; F = Fair; E = Excellent

Part numbering guide



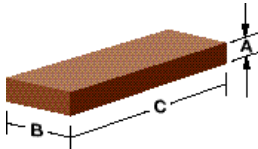
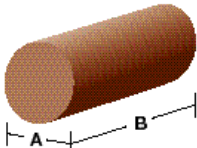
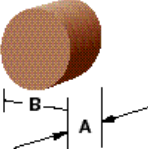
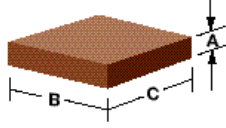
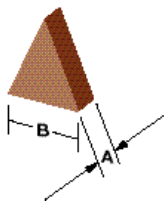
Example:

YG-1780-45 is Yttrium Iron Garnet, 1780 Gauss, 45 oe line width.



User Guide

As fired materials are available in a variety of shapes and sizes as shown below. For further details please consult factory for availability.

Availability	Minimum Size	Maximum Size
Bars 	A = .25" B = 1.00" C = 6.00"	A = 2.00" B = 2.00" C = 6.00"
Rods 	A = .25" B = 6.00"	A = 2.00" B = 6.00"
Disks 	A = .05" B = .50"	A = 2.00" B = 4.00"
Substrates 	A = .02" B = 1.00" C = 1.00"	A = 1.00" B = 2.00" C = 2.00"
Triangles 	A = .05" B = .50"	A = .15" B = 4.00"

Machined Parts

A wide variety of shapes and sizes can be machined to customer specifications. For further information please consult factory.